PCG-V505AX/V505AXP

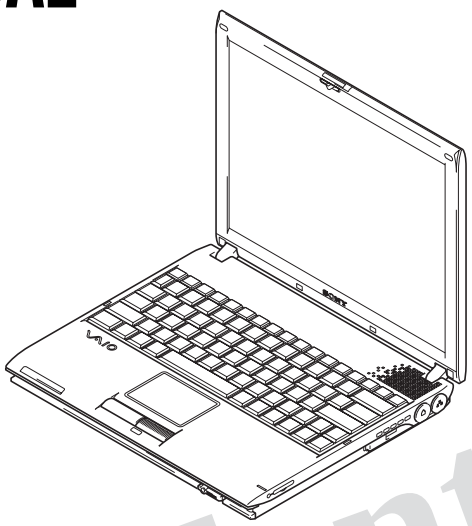
SERVICE MANUAL

For American Area

US Model
Canadian Model

Ver. 1-2003B

Revision History



Lineup: PCG-V505AX
PCG-V505AXP

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- Design and specifications are subject to change without notice.

Notebook Computer

SONY

9-876-082-01

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Caution Markings for Lithium/Ion Battery - The following or similar texts shall be provided on battery pack of equipment or in both the operating and the service instructions.

CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

CAUTION: The battery pack used in this device may present a fire or chemical burn hazard if mistreated. Do not disassemble, heat above 100°C (212°F) or incinerate.
Dispose of used battery promptly.
Keep away from children.

CAUTION: Changing the back up battery.

- Overcharging, short circuiting, reverse charging, multilation or incineration of the cells must bi avoided to prevent one or more of the following occurrences; release of toxic materials, release of hydrogen and/or oxygen gas, rise in surface temperature.
- If a cell has leaked or vented, it should be replaced immediately while avoiding to touch it without any protection.

Service and Inspection Precautions

1. Obey precautionary markings and instructions

Labels and stamps on the cabinet, chassis, and components identify areas requiring special precautions. Be sure to observe these precautions, as well as all precautions listed in the operating manual and other associated documents.

2. Use designated parts only

The set's components possess important safety characteristics, such as noncombustibility and the ability to tolerate large voltages. Be sure that replacement parts possess the same safety characteristics as the originals. Also remember that the ⚠ mark, which appears in circuit diagrams and parts lists, denotes components that have particularly important safety functions; be extra sure to use only the designated components.

3. Always follow the original design when mounting parts and routing wires

The original layout includes various safety features, such as inclusion of insulating materials (tubes and tape) and the mounting of parts above the printer board. In addition, internal wiring has been routed and clamped so as to keep it away from hot or high-voltage parts. When mounting parts or routing wires, therefore, be sure to duplicate the original layout.

4. Inspect after completing service

After servicing, inspect to make sure that all screws, components, and wiring have been returned to their original condition. Also check the area around the repair location to ensure that repair work has caused no damage, and confirm safety.

5. When replacing chip components...

Never reuse components. Also remember that the negative side of tantalum capacitors is easily damaged by heat.

6. When handling flexible print boards...

- The temperature of the soldering-iron tip should be about 270°C.
- Do not apply the tip more than three times to the same pattern.
- Handle patterns with care; never apply force.

Caution: Remember that hard disk drives are easily damaged by vibration. Always handle with care.

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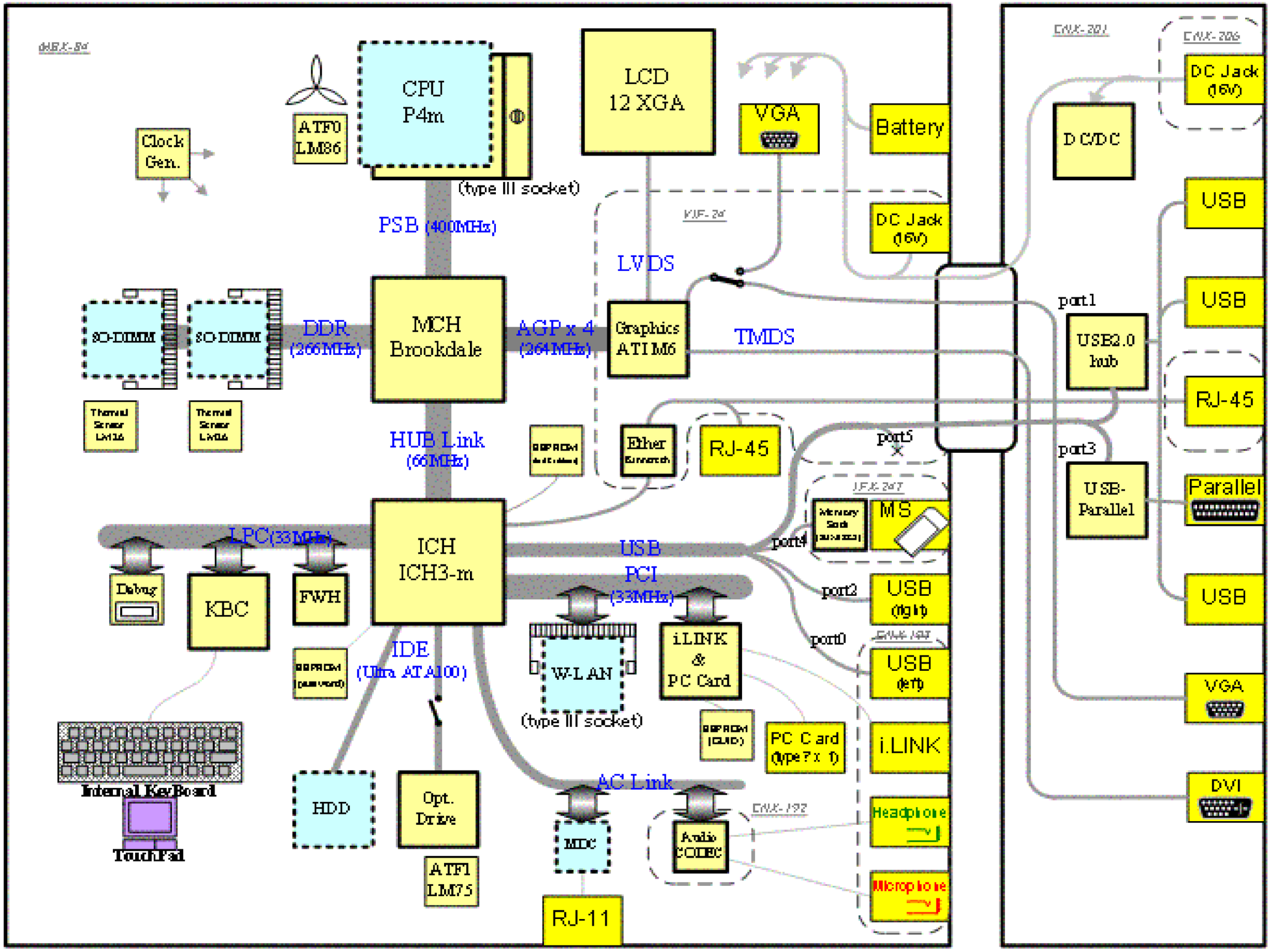
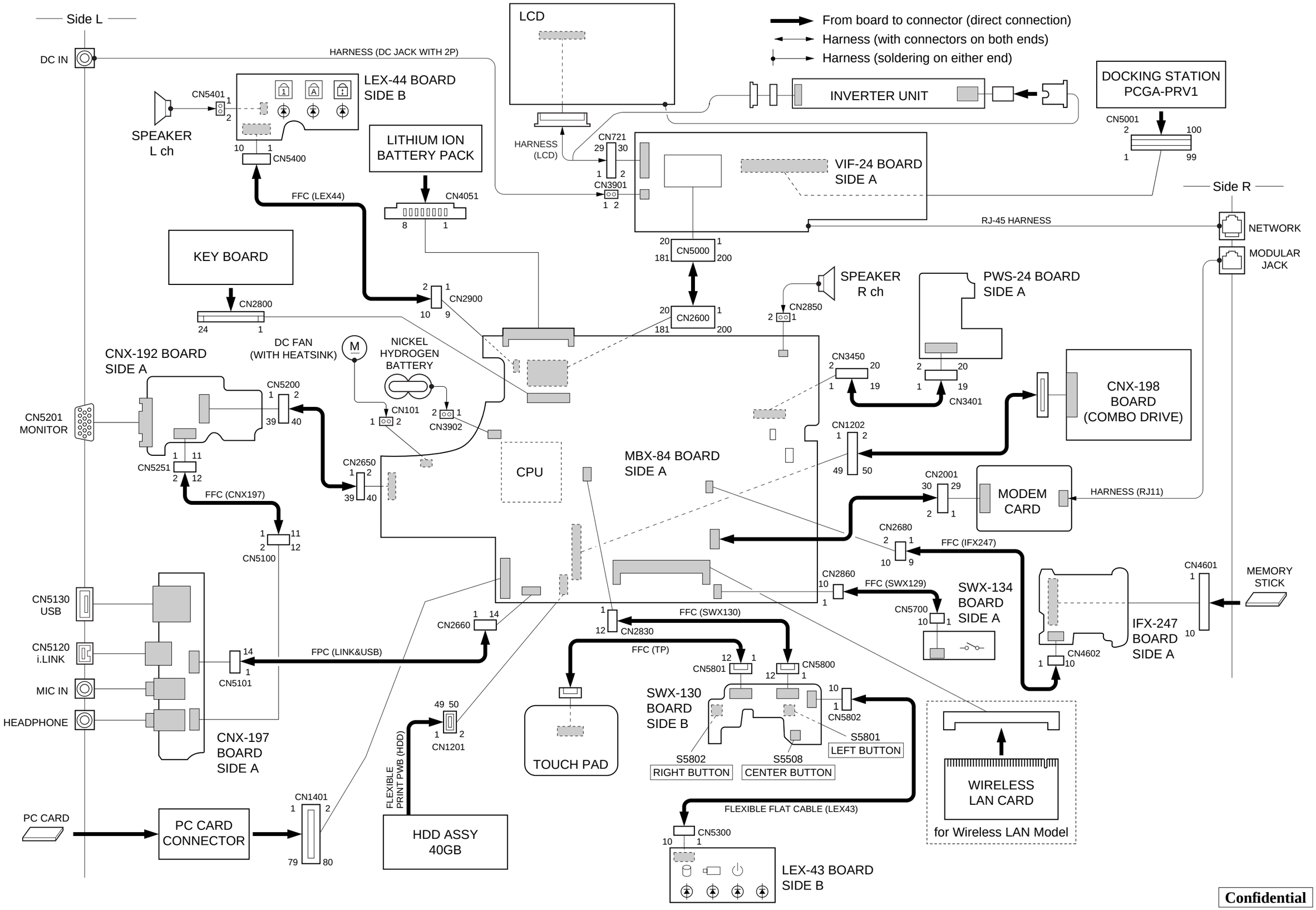
History of the changes is shown as the “Revision History” at the end of this data.

CHAPTER 1.
BLOCK DIAGRAM



CHAPTER 2.

FRAME HARNESS DIAGRAM



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CHAPTER 3.
EXPLODED VIEWS AND PARTS LIST

NOTE:

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- When two or more parts are shown in parallel, use the part described first as the main part.
- The parts marked " $ " are the High Value Modules.
- The parts marked " # " are the parts on which barcode label is attached.
  For the barcode label, refer to CHAPTER 4.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

【使用上の注意】

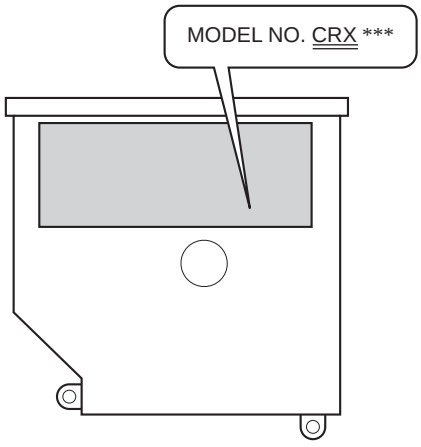
- ＊印の部品は常備在庫しておりません。
- 図面番号のない部品は供給しません。
- 併記部品の場合、上部記載部品をメイン部品として使用して下さい。
- 部品名称の前に $ 印のついた部品は、High Value Moduleです。
- 商品名称の前に # 印のついた部品は、バーコードラベル貼付部品です。
  バーコードラベルについてはCHAPTER 4 を参照して下さい。

⚠印の部品、または⚠印付きの点線で囲まれた部品は、安全性を維持するために重要な部品です。従って交換時は、必ず指定の部品を使用して下さい。

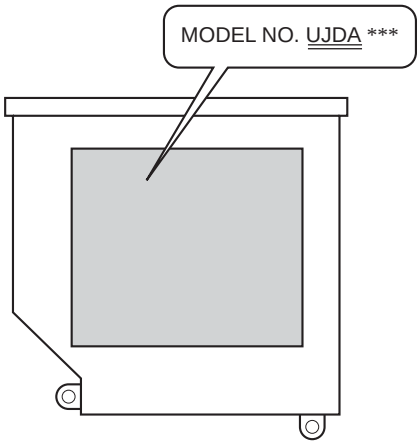
How to Use Parts Differently.

This series of product uses the two different types of optical drive (So type and Pa type).
When replacing the optical drive, use the So type parts for the So type optical drive, and use the Pa type parts for the Pa type optical drive.
Replace the peripheral parts of optical drive with the same type in the same way.

[How to identify the So and Pa types of parts]



(Type So)



(Type Pa)

[Example of showing in repair part list]

Ref.No.	Part No.	Description
999	8-457-213-00	RW DRIVE CRX950E-VN (So)
999	1-796-626-11	COMBO DRIVE (UJDA745, 9.5MM) (Pa)

3-1. Main Section

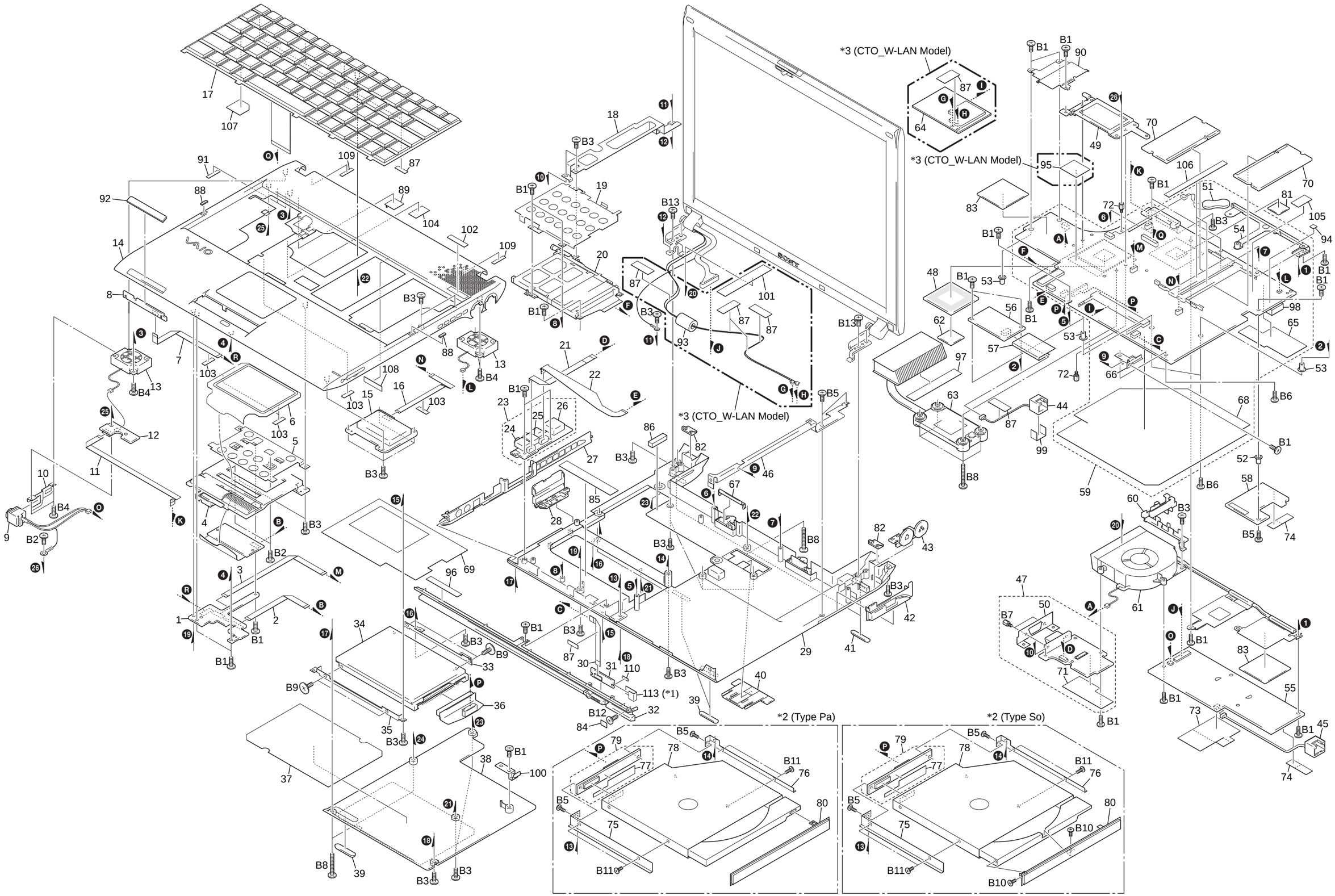
Ref.No.	Part No.	Description
1	A-8067-762-A	COMPLETE PWB SWX-130
2	1-824-996-71	CABLE, FLEXIBLE FLAT (TP)
3	1-824-996-51	CABLE, FLEXIBLE FLAT (SWX130)
4	X-4625-594-2	HOLDER (TP) ASSY
* 5	4-670-552-02	PLATE (TP)
6	1-796-623-11	TOUCH PAD
7	1-824-996-21	CABLE, FLEXIBLE FLAT (LEX43)
8	A-8067-761-A	COMPLETE PWB LEX-43
9	1-962-179-11	HARNESS (WITH DC JACK 2P)
* 10	4-670-547-01	BRACKET (KENSINGTON)
11	1-824-996-31	CABLE, FLEXIBLE FLAT (LEX44)
12	A-8067-760-A	COMPLETE PWB LEX-44
13	1-477-748-11	SPEAKER UNIT (WITH BOX)
14	X-4625-593-3	PLAMREST (F1) ASSY
15	A-8067-758-A	COMPLETE PWB IFX-247
16	1-824-996-11	CABLE, FLEXIBLE FLAT (IFX247)
17	1-477-752-21	KEY BOARD UNIT (US)
* 18	4-670-521-02	BRACKET (BOTTOM L)
* 19	4-670-517-02	BRACKET (PC CARD)
20	1-817-276-21	CONNECTOR, PC CARD
21	1-824-996-61	CABLE, FLEXIBLE FLAT (CNX197)
22	1-687-953-11	FPC (I.LINK & USB)
23	A-8067-754-A	COMPLETE PWB CNX-197
24	1-694-760-21	JACK, SMALL TYPE (HEADPHONE)
25	1-694-760-41	JACK, SMALL TYPE (MICROPHONE)
26	1-794-548-21	CONNECTOR, USB (A)
27	4-670-520-02	ESCUTCHEON (SIDE L)
28	X-4625-584-2	DOOR (VGA) ASSY
29	X-4625-583-2	HOUSING (BOTTOM) (F1) ASSY
30	1-824-996-41	CABLE, FLEXIBLE FLAT (SWX129)
31	A-8067-759-A	COMPLETE PWB SWX-134
32	X-4625-588-2	(CTO_W-LAN)... ESCUTCHEON (F) (W-LAN) ASSY
32	X-4625-592-2	ESCUTCHEON (F) (W-LAN LESS) ASSY
* 33	4-670-511-01	BRACKET (HDD) (R)
34	A-8059-139-A	ASSY HDD 40GB (I, 20) (S)
* 35	4-670-510-01	BRACKET (HDD) (F)
36	1-687-015-11	PWB, FLEXIBLE PRINT (HDD)
37	4-671-027-01	SHEET (HDD) (B), INSULATING
38	4-670-526-02	COVER (BOTTOM)
39	4-635-946-41	FOOT
40	4-670-523-02	DOOR DOCK
41	4-673-102-01	FOOT (R)
42	4-670-519-02	ESCUTCHEON (SIDE R)
43	X-4625-585-2	DOOR (RJ) ASSY
44	1-962-036-11	HARNESS (RJ11)
45	1-962-095-11	HARNESS,RJ-45
* 46	4-670-522-01	PLATE (OP) (T)
47	A-8067-753-A	COMPLETE PWB CNX-192
48	6-703-331-01	IC RH80532GC033512-2
* 49	4-670-532-02	BRACKET (CPU)
* 50	4-670-563-01	BRACKET (VGA)
51	1-756-038-21	BATTERY, NICKEL HYDROGEN
52	4-670-168-01	STAND OFF M2X6
53	4-655-326-01	OFF, STAND
* 54	X-4625-591-2	BRACKET (MBX) ASSY
55	A-8067-757-A	COMPLETE PWB VIF-24
56	1-761-606-12	CARD, MODEM
57	4-671-515-01	FILM (MODEM)
58	A-8067-756-A	COMPLETE PWB PWS-24
59	A-8114-048-A	MBX-84 (S)

Ref.No.	Part No.	Description
60	4-670-524-01	BRACKET WIRE
61	1-763-974-11	FAN, D.C
62	4-668-785-01	THERMAL SHEET CPU
63	4-670-509-02	HEAT SINK UNIT
64	1-761-648-31	(CTO_W-LAN)... CARD, WIRELESS LAN (FCC)
65	4-671-501-01	SHEET (PWS24), INSULATING
* 66	4-670-534-02	BRACKET MBX FR
67	4-670-525-01	COVER (BATTERY LOCK)
68	4-671-188-01	SHEET (MBX), INSULATING
69	4-671-028-01	SHEET (HDD) (T), INSULATING
70	6-703-555-01	IC M470L6423DN0-CBO
71	4-671-184-01	SHEET (FAN), INSULATING
72	4-651-989-51	SPACER (MBX)
73	4-671-460-02	TAPE, ETHER CABLE
74	4-671-462-01	TAPE, ETHER CABLE 2 (9X34)
* 75	4-670-503-02	BRACKET (OP) (F)
* 76	4-670-504-02	BRACKET (OP) (R)
77	4-671-026-01	SHEET (OP), INSULATING
78	8-457-213-00	RW DRIVE CRX950E-VN (So)
78	1-796-626-11	COMBO DRIVE (UJDA745, 9.5MM) (Pa)
79	A-8067-755-A	COMPLETE PWB CNX-198
80	X-4625-589-2	BEZEL (OP) (SO) ASSY (So)
80	X-4625-590-2	BEZEL (OP) (M) ASSY (Pa)
81	4-670-528-01	SHEET (MCH), THERMAL
82	4-670-796-02	STOPPER HINGE
83	4-670-529-01	SHEET (GFX), THERMAL
84	4-671-336-01	COVER SEAL 6X4
85	4-671-463-02	TAPE, FPC CABLE (60X10)
86	4-671-506-01	GASKET (FAN)
87	4-662-881-02	CUSHION, KEY BOARD
88	4-670-846-01	CUSHION (PALM)
89	4-671-180-01	COVER (LENS KB)
* 90	4-670-533-02	HEAT SINK (POWER)
91	4-672-928-01	CUSHION (LIGHT SHIELDING)
92	4-670-554-01	LENS COVER
92	4-670-554-11	(CTO_W-LAN)...LENS COVER
93	1-400-255-11	(CTO_W-LAN)...FERRITE CORE
94	4-672-754-01	COVER CABLE (10X10)
95	4-673-025-01	(CTO_W-LAN)... COVER FERRITE CORE
96	4-673-009-02	SHADE CLOTH (A)
97	4-673-026-01	FILM (FAN)
98	1-793-365-21	CONNECTOR, USB (A)
99	4-673-302-01	ADHESIVE TAPE (RJ)
100	4-672-759-01	HOOK (COVER BOTTOM)
101	4-673-292-01	(CTO_W-LAN)...COPPER TAPE FAN
102	4-672-317-01	(V505AXP)...LABEL ID (U)
102	4-672-317-11	(V505AX)...LABEL ID (U)
103	4-673-761-01	TAPE 7X18
104	4-673-757-01	CUSHION T2
105	4-673-762-01	CUSHION T4.5
106	4-673-758-01	SPACER T2 (DIM)
107	4-673-674-02	KEY BOARD (248), PLATE
108	4-673-760-01	SPACER T0.5
109	4-673-759-01	SPACER T2.3
110	4-674-585-01	SPACER 10X3X0.25
113	————	CAPTON TAPE (*1)
B1	4-672-834-21	SCREW, +B EG GRIP (M2X3.5)
B2	4-672-834-01	SCREW, +B EG GRIP (M2X2.5)
B3	4-672-834-31	SCREW, +B EG GRIP (M2X5.0)
B4	4-672-840-01	SCREW, M2 TAPPING, FLAT HEAD (M2X5.0)

Ref.No.	Part No.	Description
B5	4-672-834-11	SCREW, +B EG GRIP (M2X3.0)
B6	4-672-836-01	SCREW, M2 SPECIAL HEAD, EG GRIP (M2X3)
B7	4-635-966-01	SCREW (HEX)
B8	4-672-834-41	SCREW, +B EG GRIP (M2X13)
B9	4-672-839-01	HEAD, M3 FLAT (M3X4)
B10	4-671-374-01	TAPPING (B TYPE M1.7X3)
B11	4-671-538-01	SCREW (M2X2), SPECIAL HEAD
B12	4-671-539-01	M2 +P EG GRIP (M2X4)
B13	4-672-835-01	SCREW, M2.6 +B EG GRIP (M2.6X5)

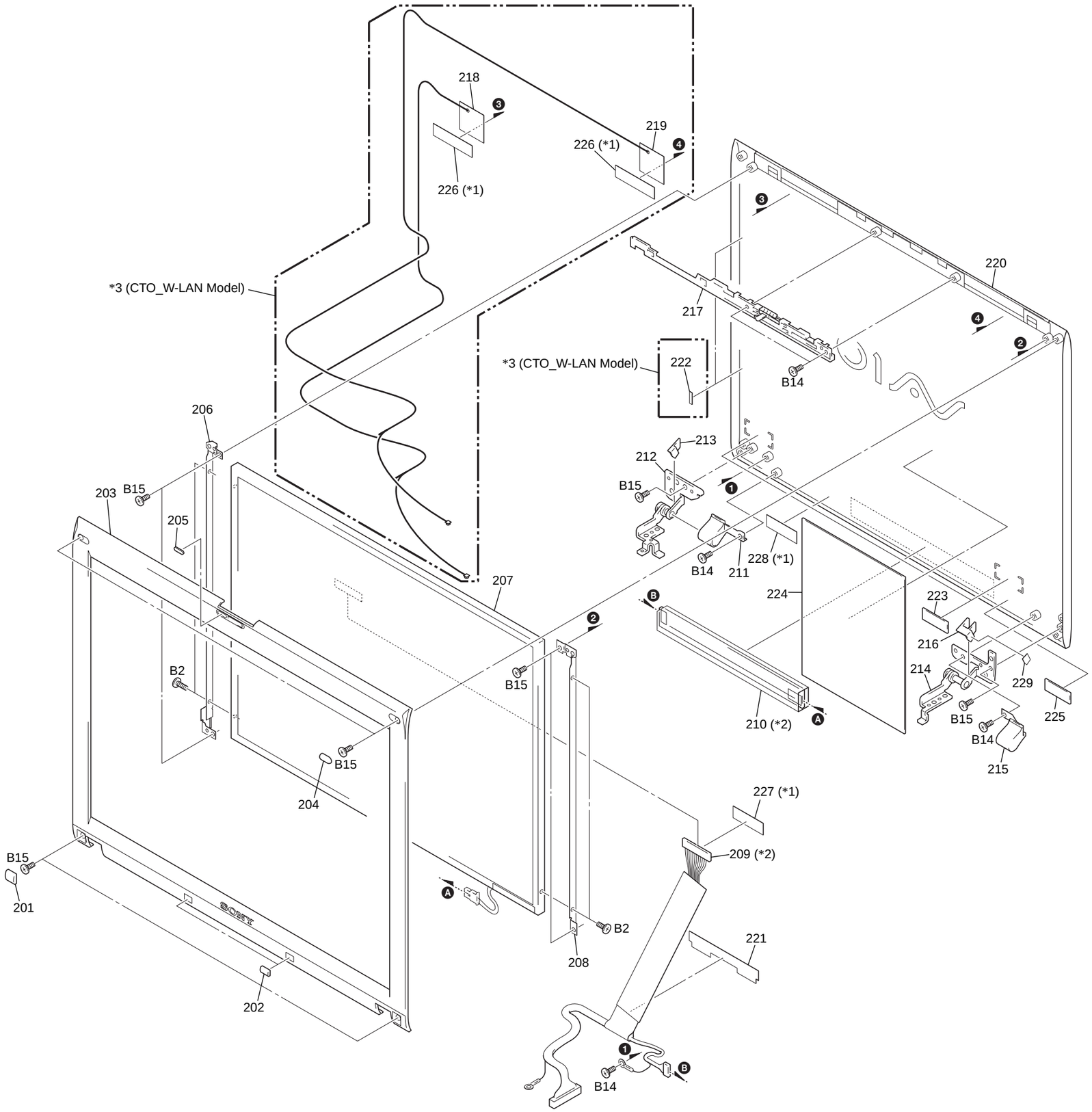
*1 Use the CAPTON TAPE.

* When change the CPU (ref. 48), refer to “Replacing the CPU” in CHAPTER 4.



*1 Use the CAPTON TAPE.
*2 By referring to [How to identify the So and Pa types of parts] (page 3-1), use the So type parts when replacing the So type optical drive, and use the Pa type parts when replacing the Pa type optical drive.
*3 For Wireless LAN Model only.
* When change the CPU (ref. 48), refer to “Replacing the CPU” in CHAPTER 4.

3-2. LCD Section – Made by TO –

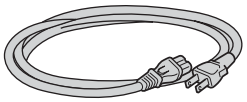


Ref.No.	Part No.	Description
201	4-670-474-01	CUSHION (L)
202	4-670-476-01	CUSHION (CENTER)
203	X-4625-579-2	HOUSING (BEZEL) ASSY
204	4-670-473-01	CUSHION (U)
205	4-670-475-01	CUSHION (LATCH)
* 206	4-670-481-02	BRACKET (LCD L)
207	A-8114-045-A	LCD (12.1) (TS) (S)
* 208	4-670-482-02	BRACKET (LCD R)
209	1-961-998-22	HARNESS, LCD (*2)
210	1-477-610-11	INVERTER UNIT (*2)
211	4-670-477-02	COVER (L), HINGE
212	4-670-483-01	TILT UNIT (L)
213	4-670-479-01	CAP (L), HINGE
214	4-670-484-01	TILT UNIT (R)
215	4-670-478-02	COVER (R), HINGE
216	4-670-480-02	CAP (R), HINGE
217	X-4625-580-2	LATCH ASSY
218	1-754-272-12	(CTO_W-LAN)... ANTENNA, FILM (FOR LEFT)
219	1-754-272-22	(CTO_W-LAN)... ANTENNA, FILM (FOR RIGHT)
220	A-8114-046-A	HOUSING (DISPLAY) ASSY (BADGE) (S)
221	4-673-031-01	COPPER TAPE (LCD)
222	4-670-485-01	(CTO_W-LAN)...CUSHION (ANT)
223	4-673-032-01	CUSHION (GAP)
224	4-673-057-01	CUSHION (DISPLAY)
225	4-673-088-01	TAPE, HARNESS (INV)
226	————	(CTO_W-LAN)... FILAMENT TAPE (W12X50) (*1)
227	————	FILAMENT TAPE (W12X30) (*1)
228	————	FILAMENT TAPE (W12X40) (*1)
229	4-673-904-01	SPACER (HINGE CAP)
B2	4-672-834-01	SCREW, +B EG GRIP (M2X2.5)
B14	4-672-836-11	SCREW, M2 SPECIAL HEAD, EG GRIP (M1.7X4.0)
B15	4-671-538-11	SCREW (M2X4), SPECIAL HEAD

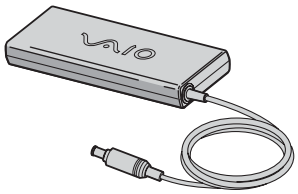
*1 Use the FILAMENT TAPE.
*2 When you exchange Ref. 209 or Ref. 210, please exchange both together.
*3 For Wireless LAN Model only.

3-3. Accessories

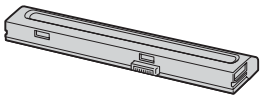
301
Power Cord



302
AC Adaptor



303
Battery Pack



Ref.No.	Part No.	Description
		ACCESSORIES
		**********
⚠301	1-757-562-21	CORD, POWER
⚠302	1-477-749-21	ADAPTOR, AC
303	A-8114-137-A	BP2V (U) ASSY (S)
	4-672-456-01	QUICK (START)

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

CHAPTER 4.
OTHERS

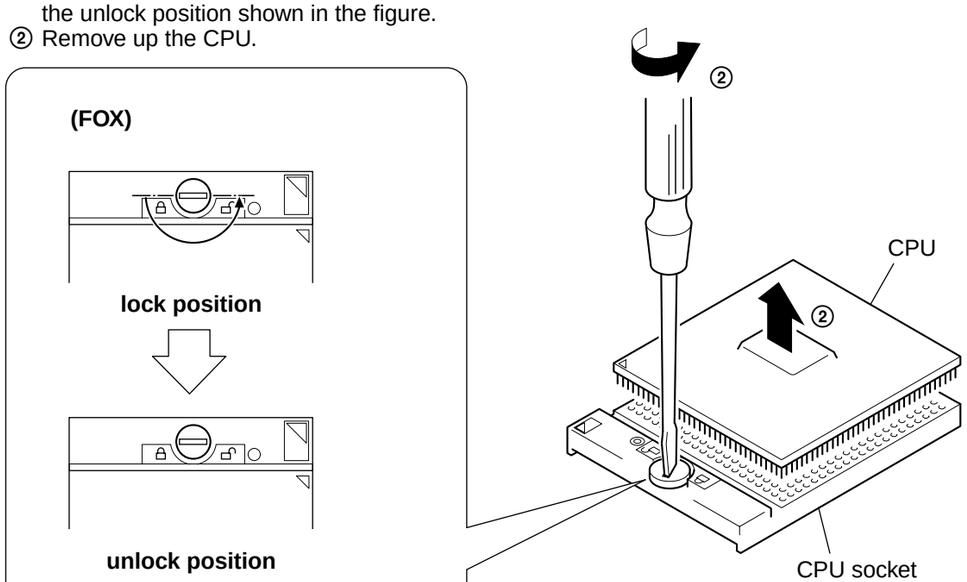
4-1. Replacing the CPU

Note: We have two kinds of CPU for this set, and either of them is used.
Two kinds of CPU have differences in the lock position and the unlock position.

1. Socket configuration 1

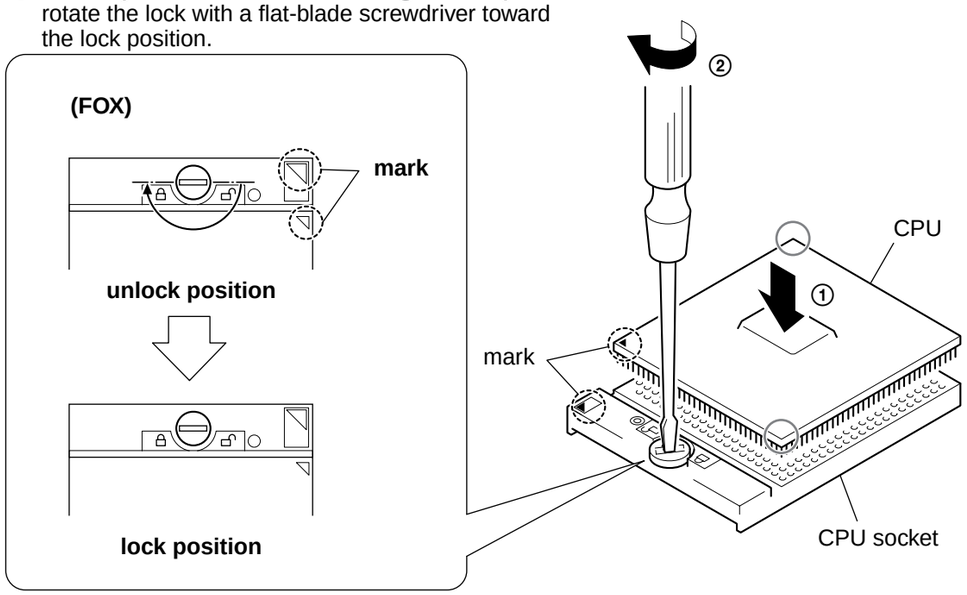
1. How to remove the CPU

① Rotate the lock with a flat-blade screwdriver toward the unlock position shown in the figure.
② Remove up the CPU.



2. How to install the CPU

① Position the mark on the CPU to the mark on the CPU socket and put in all pins to the holes on the CPU socket.
② Pressing two corners marked with ◯ in the figure, rotate the lock with a flat-blade screwdriver toward the lock position.

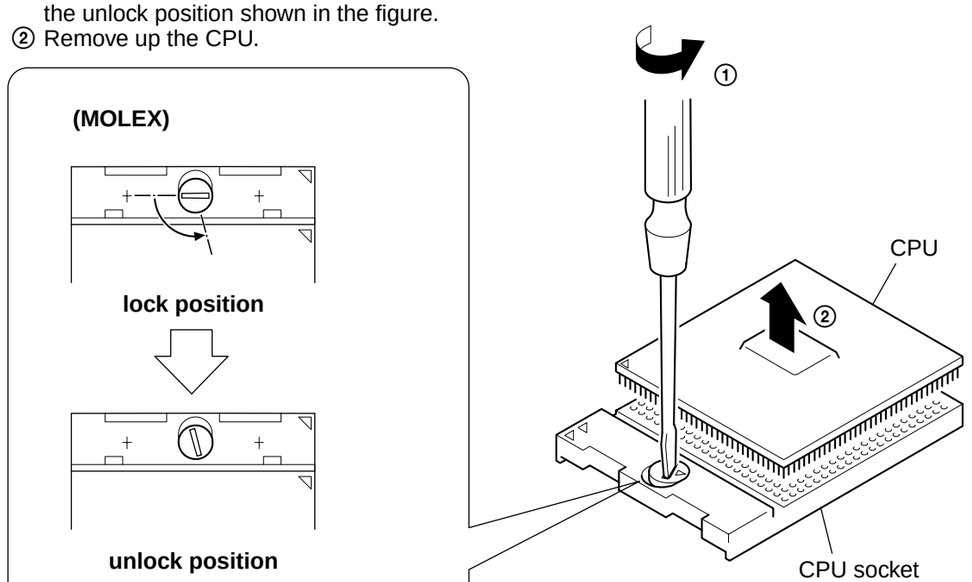


Note: Lock the CPU properly, or operation becomes unstable.

2. Socket configuration 2

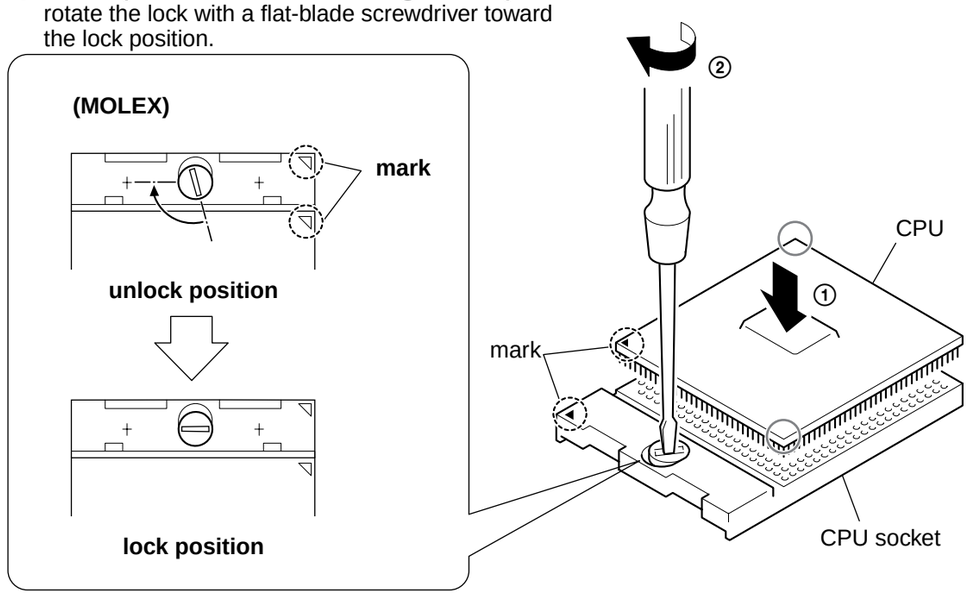
1. How to remove the CPU

① Rotate the lock with a flat-blade screwdriver toward the unlock position shown in the figure.
② Remove up the CPU.



2. How to install the CPU

① Position the mark on the CPU to the mark on the CPU socket and put in all pins to the holes on the CPU socket.
② Pressing two corners marked with ◯ in the figure, rotate the lock with a flat-blade screwdriver toward the lock position.



Note: Lock the CPU properly, or operation becomes unstable.

Confidential

List of PCG-V505 Series (As of February, 2003)

Model	Service Manual Parts No.
PCG-V505AX PCG-V505AXP	9-876-082-01

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